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ABSTRACT

This publication defines an approach and lists some possible materials to help students develop problem-solving and coping skills. It is a preliminary guide serving as a background for those wishing to learn more about this area. It stresses definitions and sources, not specific strategies. Different sections focus on kindergarten teachers, elementary teachers, secondary teachers, counselors, parents, psychologists, and teacher trainers. After a brief section giving background and definitions for various problem-solving and coping concepts, a number of selected methods and programs are outlined. Some are targeted toward special populations, such as kindergartners or hyperactive children. Others deal with specific topics such as understanding feelings or coping with change. Teacher training programs and a bibliography conclude the publication, so that those interested in pursuing the subject in more detail can do so. (Author/BP)

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Guide to Strategies for Improvement

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Preparing for a Changing World–
Coping with Change

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Pennsylvania Department of Education 1977

A Guide to
Intervention Techniques
for the Development of
Problem-Solving and Coping Skills

GOAL X
Preparing for a Changing World–Coping with Change

by James F. Hertzog
Division of Educational Quality Assessment
Office of Planning and Evaluation
Pennsylvania Department of Education
1977

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Goal X

Help every child to prepare
for a world of rapid change and unforeseeable demands
in which continuing education throughout adult life
should be a normal expectation.

Preface

The ultimate question in any assessment is, "Well, what do we do now?" It is certain that no single document can cover all possible answers to such a question even for one goal area. Different people will have different ideas as to what to do. Different schools will need different approaches. Various strategies are dependent on the rationale and definition an individual has for a goal area.

For Goal X, Preparing for a Changing World, some may feel that schools need to take a new approach to vocational education. This is perhaps one approach and strategies for this would be found under Goal VIII, Vocational Development. Others feel the best approach to Goal X is to improve all of the other nine goals. Obviously, this is a sound course of action but a difficult one. Also, obvious is the fact that one cannot isolate one goal from all others.

This writer feels, however, that there is one approach to strategies for Goal X which is both extremely important and not covered by the other goals. This approach to better be prepared for a changing world is to gain the skills to solve and cope with one's problems - problems which are numerous and ever-changing. The skills, however, remain constant and are felt to be at a cognitive level. It is an important approach because in this changing world, coping has become a matter of survival.

In this publication, an attempt is made to define the approach and to list some of the possible strategies to help students develop problem-solving and coping skills. The major purpose of the document is to get you started. Having recognized the need and the approach from this document, most persons will find that they will be eager to read more. The bibliography should get you moving in a specific direction, in accord with your position since the strategies focus on kindergarten teachers, elementary teachers, secondary teachers, counselors, parents, psychologists, teacher trainers, and others interested in the well-being of our children.

BACKGROUND AND DEFINITION

The Need

The American society is becoming increasingly concerned about the problems of young people. In a report to President Carter, Joseph Califano, Jr., a Carter advisor and now Secretary of Health, Education and Welfare, cited a number of disturbing facts about our youth:

> "One million young Americans run away from home each year."
>
> "Suicide is the second leading cause of death for young people between the ages of 15 and 24."
>
> "One teenager in 20 has a drinking problem."
>
> "Juvenile delinquency has increased to the point where if present trends continue, one out of every nine youngsters will have been to juvenile court by age 18."
>
> "The number of youths arrested for murder, robbery, rapes, and assaults, while still small in absolute numbers, has leaped 254% since 1960."

Why are young people turning to these outlets? Stress coupled with a greater independence from family life is one primary cause. Given this stress, too many young people find themselves unable to cope effectively. Most of them lack adequate coping skills to deal with their problems - ranging from getting along with their peers to alcoholism of a parent.

Ability to cope and deal effectively with problems is essential to personal adjustment and successful survival. The development of the abilities and their associated attitudes which allow the individual to view problems as opportunities for growth, rather than notes of doom, poses a challenge to education.

Relationship of Instrumentation to Strategies

The development of strategies for the improvement of Goal X, Coping with Change, is enhanced by the recognition of the relationship between the present measurement instrument and skills used by the student in dealing with situations similar to those given in the instrument. The instrument gives the situations and the student indicates the time spent on various activities. If the student spends a great deal of time on acceptable activities and less time on unacceptable ones, he/she scores higher. If one views this choice process as an attitudinal measurement, strategies would have to focus on attitudinal change. However, this writer contends that the process is a cognitive one; and the student

who is trained in the use of coping skills will recognize the activities which employ these skills, will select them as the best to spend time on and will score well in the measurement. Therefore, most of the strategies for improvement will focus on the development of coping skills.

Relationship of Coping and Change

Why are coping skills needed when dealing with change? Is change so difficult? Frankly, yes. Consider the factors which influence individuals' resistance to change.

First, individuals normally resist change. Physiologically, the body's resistance to change by its built-in regulatory mechanisms keeps the body at a fairly constant state. When the room grows colder, our bodies tell us to get a sweater to resist the change and maintain the preexistent temperature. This interaction and stabilization with the changing environment is necessary to the function of human existence. Studies have shown that humans in perceptual isolation lying quietly awake in a comfortable bed, free from disturbing stimuli, cannot tolerate the situation for very long.

Second, habit causes great resistance to change. Once a habit is established, its operation becomes satisfying to the individual. The habit may be established to culminate satisfaction but often becomes intrinsically gratifying. Often an individual enjoys doing in his/her free time an activity required at school or on the job. The familiar is preferred.

What is Coping?

The term "coping" has acquired a variety of definitions. Lazarus (1966) only applied the term when dealing with situations involving threat. In these situations the stakes are high and the individual is presented with strong drive, frustration, stress, or emotion; and the efforts at mastery are rigid, primitive, somewhat inadequate and sometimes unrealistic. This definition is much too narrow and lends the term a negative connotation.

A more acceptable definition for our purposes is that of Murphy (1962) who defines coping as any attempt to master a new situation that can be potentially threatening, frustrating, challenging or gratifying. Using this definition, the term "coping" can also be applied to situations that present relatively low stakes - with little frustration and conflict and in which the individual tends to take deliberate, flexible, reality oriented and rational efforts toward mastery. Yet, this is the type of situation in which the term "problem-solving" is most often used.

There really is no reason that problem-solving should not be an approach to resolving frustration and conflict. Also, there is no reason why coping, as in Murphy's definition, cannot be used in more positive contexts of challenge and potential gratification.

Therefore, coping can be defined as "problem-solving efforts made by an individual when the demands he or she faces are highly relevant to his or her welfare (that is, a situation of considerable jeopardy or promise) and when these demands tax his or her adaptive resources." (Lazarus, et. al., 1974) This definition points out the emotion involved in coping includes both the positive and the negative potential outcomes, recognizes the overlap between coping and problem-solving and emphasizes tasks that are not just automatized but in which the higher levels of the individual's adaptive skill are called upon.

Special Emphasis on Adolescent Years

The years of early adolescence have always been recognized by teachers and parents as difficult years. There are three sets of new demands on the early adolescent. First, the biological changes of body configuration present the early adolescent with great concern. Or, in some cases, the lack of change of body configuration presents the concern.

Second, the challenge of the new social system is found in the middle school or junior high school. Primarily, it is the increase in the size of the social system that presents the stress. There are more students with which to compete and, therefore, greater pressure for academic achievement. There are more students with which to compete in athletics and other extra curricular activities as well. There is also more social competition and an uncertainty about ability to make new friendships.

Third, the early adolescence years, "the teens," and admission into high school become a too convenient marker of a new role in society. The parents and teachers who stereotype the early adolescent using an adolescent model of behaviors, responsibilities and independence create additional stress. The demands to be "young men" and "young ladies" without the necessary maturity and support present formidable conflicts to the early adolescence.

Problem-Solving - The Definition

Teachers and administrators have long recognized teaching problem-solving as a function of the schools. In a recent Gallup Poll (Elam, 1973), the public ranked problem-solving skills just below skills in reading, writing and arithmetic. Yet, somehow it gets little priority in the curriculum. Problem-solving is not new to the classroom. It may, for example, be easily recognized in the mathematics class. Yet, the true development of the skills may even be lacking there. In reality, the responsibility for its development should be accepted in all content areas. Later in this paper and in other references, numerous examples can be found which demonstrate how it can be incorporated into content areas including physical education, art, and music as well as social studies, (where most of the obligation has been laid in the past).

Problem-solving can also be taught as a supplement to curriculum in mini-courses and electives.

Problem-solving as used in this paper will be the process which "(1) provides a variety of potentially effective responses to the problem situation, and (2) increases the likelihood of selecting the most effective response from among these various alternatives." (Goldfried and Davison, 1976)

The relevance of the teaching of problem-solving to the ability to cope is based on two assumptions: (1) ineffectiveness in coping with problem situations often causes students to turn to behaviors - like drug abuse, attempted suicide, or crime - which in time may require psychological treatment; and (2) a student's "general effectiveness may be facilitated by training in general skills that would allow him(her) to deal independently with the challenges of day-to-day living." (Goldfried and Davison, 1976)

Problem-solving can be viewed as one element in the development of "independence," the "independence" that is being undertaken at a young age in today's society. Therefore, training in problem-solving is recommended for elementary students, imperative for intermediate students and overdue for secondary students. The skills remain constant; the problems simply become more intense with age. Our challenge is to assure that students survive the minor problems so that they may face and deal with the major ones.

Steps of Problem-Solving

Using problem-solving activities obligates the teacher to know the steps in the operation of effective problem-solving and certain related factors to these steps. There are different names for each of the steps depending on the source of information, but the theory of each element is basically the same. By implying that teachers recognize these steps, it should not be inferred that all real-life problems are solved in this way. Rather, it is simply the recognition of a basic operational procedure that can be applied to problem-solving.

Problem Orientation

The obvious first step in the problem-solving process is the recognition of an existing problem. The student must be aware that a change in the routine of life is present and things are not progressing as they should. (Williams, 1975)

A teaching strategy that "encourages independent problem-solving behavior includes the set or attitude to (1) assume that problem situations constitute a normal part of life, and recognize the possibility that one can cope with many of these situations; (2) identify problem situations when they occur; and (3) inhibit the tendency to respond to one's first impulse." (Goldfried and Davison, 1975)

Problem Definition and Formulation

Situational problems presented in the classroom are often clearcut. In real life, problems are ambiguous and lacking in necessary information and facts. The student, when in a real-life setting or a good classroom simulation, "must (1) define all aspects of the situation operationally, and (2) formulate or classify elements appropriately." (Goldfried and Davison, 1975)

The student must gather all the necessary information. The teaching of this searching and inquiring process could include, as required, teaching use of the library, interviewing techniques and data recording. These processes should be applied as much as possible in the community. If the problem is one involving finances, students might talk to a banker. If the problem involves ecology, the student may inquire for information from the waterways protection officer, the officials of the State Department of Labor and Industry, the Department of Environmental Resources, or local construction engineers as appropriate. The teacher should underscore the need for students to search widely for facts rather than relying on the teacher, or textbook, as the final authority. (Williams, 1975)

Hypothesizing

Generating alternative solutions or hypotheses is the heart of problem-solving. The basic idea is to determine as many alternatives as possible - some of which may prove to be effective and some, perhaps, ineffective.

A well-known method to accomplish this process is called "brainstorming." This method has four basic rules:

1. Criticism is ruled out. Adverse judgment of ideas must be withheld until later.

2. "Free-wheeling" is welcomed. The wilder the idea, the better; it is easier to tame down than to think up.

3. Quantity is wanted. The greater the number of ideas, the greater the likelihood of useful ideas.

4. Combination and improvement are sought. In addition to contributing ideas of their own, participants should suggest how ideas of others can be turned into better ideas, or how two or more ideas can be joined into still another idea. (Osborn, 1953)

Students should be encouraged to avoid "either-or" thinking and to develop the attitude that it is more likely to have the most effective solution included if they have more alternatives.

Selection of Alternatives

One may often come up with the most effective solutions as one of

the alternatives, yet may fail to recognize it. Each alternative actually presents a mini-problem - to use it or not. (Williams, 1975)

The process of determining the effectiveness of the solution "involves (1) a prediction of the likely consequences of each course of action, and (2) a consideration of the utility of these consequences in dealing with the problem as formulated." (D'Zurilla and Goldfried, 1971)

An aid in performing this process is to differentiate "between 'strategies' or general courses of action, and 'tactics' or the specific ways these alternative courses might be implemented. In selecting the best strategy, focus is on the likelihood of resolving the major issues; in selecting tactics, the focus is on the likelihood of effectively implementing the strategy." (Goldfried and Davison, 1975)

Verification

To solve a problem effectively, "the individual must carry out the selected course of action, observe the consequences of his[her] actions and match the real outcome against his[her] expected outcome. If the match is satisfactory, the problem-solving process can be terminated. ... If the individual finds the match unsatisfactory, however, he[she] continues.... repeating the procedure until a satisfactory match is obtained, at which point the problem-solving process is terminated." (Goldfried and Davison, 1975)

Qualities of Problem-Solving Skills

In addition to the steps of problem-solving, the teacher who wishes to promote learning in this skill should recognize the qualities of a person who is well-trained in problem-solving. They include the following:

1. Attention to Detail. It is essential to get the facts with as much detail as possible and to pay attention to all the details. The problem exists in an environment with a past, a present and a future. This knowledge must be used.

2. Motivation. One must have reason to solve a problem. This reason must also include an element of hope that the problem can be solved.

3. Sequential Thinking. One must follow a logical, step-by-step pattern with causes and effects, comparisons and contrasts taken into account.

4. Fluency of Thinking. Imagination must be used for the creation of as many ideas as possible to be generated by the analysis.

5. Flexibility. This is the use of alternatives that are possible only in the consideration that requirements are not always as rigid as they may seem.

6. Consideration of Social Influences. The effects of the solution on the attitudes of the persons involved must be considered.

7. Ability to Overcome Environmental Blocks. There are the physical blocks such as phones ringing, radio and TV noise, and other distractions; and there are personality blocks such as home discord, poor peer relationships, domineering teachers.

8. Ability to Overcome Cultural Blocks. Cultural taboos may restrict the solution of a problem. Laws often restrict the use of a possible solution. A good solution is one which does not cause more problems.

9. Openness to Accept Solution. A problem need not be solved at a person's desk. It can be solved at its location such as in the gym or in the lab, but it may be solved as well in another location - the hall, the cafeteria, or after school. One must be open to accept the solution when and where it is reached. (Searles, 1974)

STRATEGIES

When researching the library for resources on problem-solving, one does not come up empty-handed. As stated earlier, the idea of promoting problem-solving in the classroom is not a new one. However, when reviewing these books - at least the less recent volumes - little is found in the way of strategies. At most, one finds the sort of text: "This is what happened in my class," or "this is what Mrs. Smith did." One such volume worthy of mention is entitled Problem-Solving in the Classroom (Judgins, 1966). It describes Mrs. Brown's mathematics classroom, Miss Young's social studies classroom, and a discussion of problem-solving. If reading dialogue of sample classroom behaviors is the type of document which you feel is helpful in improving your techniques, then you should read this book.

The elementary teacher, who is looking for ways to get students to ask more questions and to be more accepting of questions students ask, may wish to check several articles written by Olmo (1970, 1971, 1975a, 1975b). How do you respond if a student in a geography class on Alaska asks, "How can Eskimos possibly eat whale blubber?" Do you casually say, "That's their problem!" and reject the question? Or, do you use it as an invitation to help students understand the impact of the natural environment upon the development of customs? Olmo offers lesson plans which will help lead students to this type of questions and the teacher to better responses.

For those who feel that problem-solving techniques are limited to mathematics and social studies, Smith and Procher (1975) offer an interesting diversion from competitive sports, gymnastics, and calisthenics for physical education classes. The use of group problem-solving activities in physical education also has many strong merits. First, they present valuable experience in problem-solving tasks. Second, they are concerned with the success of everyone so that no one is a loser and everyone is a winner - promoting better self-concepts. Third, in those activities requiring close physical contact, cooperation and compromise in surmounting imagined dangerous situations, they serve to knit the group together and serve as a way to break the ice with a newly formed class. Fourth, they offer opportunities for some students to emerge as leaders or tutors, especially in a class of varying grade levels. Fifth, these activities offer opportunities for the creative students to exercise their talents and be recognized. You will probably also find other spin-off effects such as increased interest and the ultimate goal of physical education, i.e., increased physical abilities. Every physical education teacher should investigate the sample problem situations posed in the article.

The teacher's imagination (or the students' with limits set by the teacher) can provide other situations. Of course, with public school students one must not create activities which are in fact dangerous; the dangers must remain imagined. The teacher must also take caution

not to allow the group to proceed with some illogical or harmful solution to the problem. If the teacher has difficulty in thinking up ideas, there are new sources emerging. One primary source is the book, "Adventure Curriculum: Physical Education" by Project Adventure, 775 Bay Road, Hamilton, Massachusetts 01936.

Although these are good sources, the best single, most up-to-date source is a 1976 book by Spivack, Platt and Shure entitled The Problem-Solving Approach to Adjustment. The authors describe a distinct group of cognitive skills which help to determine a person's ability to solve social problems and deal successfully with other people. These interpersonal cognitive problem-solving (ICPS) skills, which go beyond intellectual ability, include the capacity to generate alternative solutions to problems, to plan ahead, to grasp the means that may be necessary to achieve ends, to consider the consequences of one's acts, and to understand how the way one feels and acts is influenced by others and vice versa. These skills are different within age groups and some are more important than others, but they are all significant in social adjustment.

The authors bring together the basic research done to date on ICPS skills. They define the issues, describe methods of measurement, demonstrate the relationship of ICPS scores to social adjustment, discuss the relationship of ICPS skills to IQ and other measures, and show how ICPS skills are learned in the family and in childrearing situations.

Most importantly, the book outlines a number of programs designed to enhance problem-solving skills in both children and adults. The programs focus on teaching the learner how, not what, to think. The book describes them in more detail than is possible in this paper and in sufficient detail so that you can fully evaluate their significance for your own situation.

Kindergarten Program

The programs include a number of techniques developed by the authors which may or may not be usable in your school setting. One program by Shure and Spivack (1974a) is designed for use by kindergarten teachers in the group setting. The program is said to have effectively "enhanced the problem-solving thinking of children who are behaving normally and enhanced the thinking and normalized the behavior of children who before ... tended to be impatient and impulsive or withdrawn." The normal children who were exposed to the program were less likely to show behavior difficulties the following year than those not exposed.

This program is a sequenced series of lessons in the form of games that the teacher plays with the children. These games and the dialogue take about twenty minutes a day over a period of three months. There is included a general problem-solving approach which the teacher is encouraged to use throughout the day as real problems arise. Since the best group size is about ten students, the teacher may break the class in smaller groups and work with them every second or third day and complete the

work within a school year. Some materials are necessary but they may, in some cases, already be available or be easily made to keep budget costs down.

Program for Hyperactive Children

A second program by Camp and Bash (1975) entitled Think Aloud borrows heavily from the above program. It should be investigated by those interested in an individually administered program for children between the ages of six and eight who are manifesting hyperactive, poorly self-controlled behavior.

Program for Mothers of Young Children

The book continues with a program by Shure and Spivack (1975d) for mothers of young children. It is quite similar to the first program but uses the mother of the child as mediator. Since it is not for direct use within the school, no further explanation will be made here.

Program for Third and Fourth Graders

The next program discussed is one for third and fourth grade students in the public school. It is based on work by Larcen, et. al., (1974) and was further tested by McClure (1975). "The purposes of the program are: (1) to instill a problem-solving orientation, (2) to teach how to identify and define a problem, (3) to enhance capacity to generate alternative solutions and elaborate them, and (4) to sensitize to consequences." Evidence is presented that these purposes are being achieved. The program is not a cookbook, but a listing of suggested sequential techniques. It includes modeling effects, teacher reinforcement, brainstorming, and some role-playing.

Within each of the six parts of the program, the teacher may work with the whole class, small groups of four or five students, or assign a task to a small group to work by itself. The program is said to take six weeks on a twice weekly basis and thirty minutes each. The small group sessions are recommended so the teacher may need parent volunteers to carry out the program. The six units include: (1) divergent thinking, (2) problem identification, (3) alternative solutions, (4) consideration of consequences, (5) elaboration of solutions, and (6) integration of problem-solving behaviors.

Program for Fourth and Fifth Graders

A curriculum for fourth and fifth grade students entitled AWARE: A Curriculum for Social Development by Elardo and Cooper (in press) is intended to improve social competence and social development. It includes a section on problem-solving which is based on the Shure and Spivack approach described earlier. The program has been piloted and expanded in the form of a handbook for teachers. There are four sequenced

units: (1) Getting Acquainted, (2) Recognizing and Understanding Feelings, (3) Understanding and Accepting Individual Differences, and (4) Developing Social Living Behaviors: Self-Reliance and Respect and Concern for Others. Additional techniques are given for teachers to use in discipline situations. It is suggested that the program be incorporated into the total school curriculum through enrichment activities in which learned skills can be experienced. The program is intended to be part of the curriculum throughout the year. Discussion and role-playing groups meet twice weekly for thirty to forty minutes each.

Decisions Are Possible

A program for fourth to sixth grade students is under development by a group (Branca, D'Augelli, and Evans, 1975) at The Pennsylvania State University. The group's primary focus is on the prevention of drug abuse. Having concluded that knowledge of drugs is not an effective approach, these researchers are considering methods of improving decision-making skills of children. The program is built on the assumption that decision-making is a sequential and logical progression of thought. The goals of the Decisions Are Possible (DAP) (1974) program take the form of eight components of decision-making which the authors have defined as:

1. Define the problem.
2. Identify all relevant alternative courses of action.
3. Identify all probable consequences or outcomes of each alternative.
4. Identify the risks involved in pursuing each alternative.
5. Identify and rank salient personal values.
6. Select the alternative characterized by consequences of greatest satisfaction of personal values and least risk.
7. Take the chosen course of action.
8. Review the selection.

Results of the initial testing of the program indicate that in general, student decision-making improved after exposure to the program. However, in some of the component skills the effectiveness was not as great as in others.

This ten-session program is based on stories about hypothetical characters in problematic situations. Two formats are used. One format involves stories about a constant set of characters which are given personality descriptions by the students. These stories are sequenced so that each episode in the continuing saga lays the groundwork for the next. The second format involves characters who reflect values and life-styles unlike those exemplified by the characters in the continuing

saga, "thereby demonstrating the constancy of the decision-making process across contexts while highlighting the role of personal values in decision-making." The stories (dilemmas) with the first format are presented to the group of children, and the group leader guides the class through the steps involved in the decision-making process. The class then decides on a final, best decision and its possible consequences. The second format is used for the second segment of each session which involves small-group discussions followed by role-playing of the decision-making process and a final review of the process and its consequences.

This program, although still in its early developmental stages, offers great possibilities in the enhancement of Goal X. Among its advantages are the fact that it is based here in Pennsylvania and has been used with Commonwealth students. Also, it is consistent with the other current work in that it focuses on the education of the thought processes which are felt to underlie the solving of real-life problems.

See Lab

The See Lab program by Howe and Achterman (1975) is a broad program on interpersonal relationships which includes a segment on problem-solving. This segment is similar to many of the above programs in that it encourages the generation of ideas about the nature and possible cause of a problem (through reflective listening) and in requesting enumeration of "appropriate" solutions. However, the technique does not deal with consequences in any consistent way. See Lab encourages the person to evaluate what he/she does in terms of what happens as a result of his/her actions but not the pros and cons of what he or she might do before he or she takes such action. This is probably due to the broader mission of the program - to deal with human values and self-enhancement.

Problem-Solving Training Procedure

Goldfried and Goldfried (1975) have designed a problem-solving training procedure based on the five steps of problem-solving which are outlined in the earlier discussions in this publication (see pages 4-6). Their purpose is to provide a general coping strategy to individuals "so that they may be in a better position to deal more effectively with a wide variety of situational problems." The procedure is not oriented for teacher use with group settings and would be appropriate only for counselor-student or psychologist-student sessions. For these persons, reading Clinical Behavior Therapy by Goldfried and Davison (1976) is suggested.

Thresholds

Another program designed to serve in a correctional situation, Thresholds by Burglass and Duffy (1974), is worthy of mention to the counselor or psychologist. The program includes seventeen individual sessions and three group sessions. Also, the theory behind this program

which focuses on decision-making may be of interest to designers of new programs.

Understanding Our Feelings

Understanding Our Feelings by La Rue and La Rue (1969) consists of a number of problem situations presented in picture and story form. These materials "serve as a point of departure for role-playing in which children have an opportunity 'to analyze a social dilemma, explore their feelings about it, and then consider many different solutions to the problem and the consequences of those solutions.'" The program manual does not recommend the particular age group for its use and claims that even children who do not actively participate can benefit. It is suggested that it may be used as part of a social science or language arts program in that it helps self-expression and discussion. The five-step process purports to train problem identity, generating ideas about solutions and consequences, and means-ends thinking. The high dependence on role-playing, a technique which has controversial effectiveness in improving problem-solving skills, makes this a questionable approach.

Words And Action

Another program based on role-playing is Words and Action by Shaftel and Shaftel (1967). It claims "that role-playing helps children gain perspective, learn how to deal with interpersonal situations, and acquire ability to analyze problems and practice solutions." Even though the program was designed to teach children how to solve problems, the authors appear to be more interested in encouraging verbalization and thinking rather than to teach specific problem-solving cognitive skills. Again, role-playing--which was popular in much of the 1960's literature--has not been clearly demonstrated as effective in improving problem-solving skills.

Other Valuable Programs

There are other programs worthy of mention which are not included in the Spivack, Platt and Shure book. For most of these, this writer has given a source to obtain further information.

Self-Incorporated

"Self-incorporated" is a series of fifteen, 15-minute TV programs and a teacher's guide designed to stimulate classroom discussion of the critical issues and problems of early adolescence. Its objective is to instill in eleven to thirteen-year-olds a desire to learn skills for coping with these issues and problems. It includes life-coping skills: valuing, decision-making, confronting, risking, experimenting, withdrawing, denying, fantasizing, mediating. The topics covered in the series include: (1) physiological changes, (2) making decisions, (3) boy/girl relationships, (4) everyday pressures, (5) cliques, (6) failure and disappointment, (7) privacy, (8) pressure to achieve, (9) ethnic/racial

differences, (10) systems and self, (11) sex role identification, (12) morality, (13) family communications, (14) sibling rivalry, and (15) family adversity.

The series is designed to be used by teachers, counselors and adult leaders. These leaders should be committed to helping young people develop as human beings. Before presenting the programs and using the guide, an adult leader should have developed an inquiring, accepting atmosphere in the group and be able to lead an exploring, but comfortable, discussion of the issues and skills. Leaders also must have a genuine respect for each child's privacy.

The guide includes a story summary of each program and an indication of the purpose of the lesson. There are also questions for discussion, worded so that they can be read directly to the class. Questions of opinion, as of values, are open-ended and have no right or wrong answers.

In addition, for each program there are several suggested learning activities. Reference materials, a family discussion booklet and a kit for community use can also be obtained.

The series is available from the Pennsylvania Department of Education. For more information on the programs, contact Joseph P. Carr, Bureau of Curriculum Services, Department of Education, Box 911, Harrisburg, Pennsylvania 17126 (717-787-4323). Videotapes will be duplicated by the department onto blank tapes provided by the school district. For this service, contact Benjamin Jenkins, Bureau of Instructional Support Services, Department of Education, Box 911, Harrisburg, Pennsylvania 17126 (717-787-5174).

Decisions and Outcomes

Decisions and Outcomes is a decision-making curriculum for high school students who are faced with personal, educational and career decisions. A course of study in the development and application of decision-making skills is presented to serve as a framework for a course in decision-making, as a major component in guidance and counseling programs, or as part of subject areas such as English, history, human relations and health education.

The guidebook includes discussing the importance, definition and process of decision-making; establishing objectives; gathering and analyzing data; and applying decision-making skills. Copies of Decisions and Outcomes may be ordered from College Board Publications Orders, Box 2815, Princeton, New Jersey 08540.

Coping with Change

Charles Kozoll, in his article "Coping With Change," describes a three-step process which could be used as a unit in social studies. Addressing the secondary teacher, the steps are: (1) evaluating your own feelings, (2) change in your students' lives, and (3) examining change in the community. Change in students' lives consists of two types: (a) change without control, and (b) the student as change agent. The purpose of the unit is "to build students' ability to: (a) analyze

change, (b) understand the kinds of adoption strategies employed, (c) analyze the effects of change agents, and (d) assess the benefits derived. Reprints are available from the Division of Educational Quality Assessment, Department of Education, Box 911, Harrisburg, Pennsylvania 17126.

Making Judgments

Making Judgments is an instructional package for use with students in grades six through nine. Its objective is to help students use concepts, rules and strategies to make rational decisions about the reliability. relevancy, warranty, and sufficiency of information. Through use of the package, it is hoped that students will become more competent in their ability to solve problems and make decisions.

The package is divided into five independent courses varying in length from five to six lessons each. The first course, "Conflict," introduces specific principles for assessing argumentative assertions and value judgments. The second course, "Judging," deals with the principles for assessing evidence and testimony, (e.g., as in a court of law). "Reporting," the third course, covers standards for judging factual reports and interpretations. The fourth course, "Advertising," presents criteria for evaluating the meaning of persuasive appeals and the validity of empirical claims. Finally, the fifth course, "Causation," instructs students in the skills of generating and testing causal inferences and determining proof.

Each course has been designed: (1) to teach a set of evaluative skills; (2) to teach a strategy for evaluating a certain kind of communication, issue, or body of evidence; (3) to acquaint students with the responsibilities involved in a particular occupation or role; (4) to give students the opportunity to assume these responsibilities in a problem-solving or decision-making situation; (5) to give students practice in applying learned skills in a variety of content situations; and (6) to provide for practice of learned skills in a group situation. In general, each course begins by asking students to make simple discriminations and culminates in more sophisticated learner-directed problem-solving activities. Objectives are arranged to provide a cumulative learning experience within and across the lessons of each course.

Student materials consist of programmed lesson books, workbooks, games, and objective-referenced tests. Student responses to lesson book questions are recorded in the workbook. Correct answers and feedback in the workbook are printed in invisible latent-image type. The ink is made visible when "developed" by a special felt-tip pen. There is also a teacher's guide that includes handouts and directions for group activities such as discussions, competitions, simulations, paper-and-pencil exercises, and role-playing. Self-pacing lessons are designed to be worked on individually; games are small-group activities.

Lessons and activities for each course have been designed to fill a 45-minute class period, two or three times a week for six weeks. The courses may be used individually or in any sequence desired.

For more information, contact John W. Thomas, Project Director, Research for Better Schools, Inc., 1700 Market Street, Philadelphia, Pennsylvania 19103.

The New Model Me

The New Model Me program, also called "Curriculum for Meeting Modern Problems," uses an experimental approach to assist secondary students and teachers to understand the causes and consequences of behavior and to select viable alternatives to nonconstructive behavior. The last unit, Change, is designed to help students review, evaluate and deal with change in their lives. This program is available as an adopter/adapter category of ESEA Title IV, Part C, grant. More information is available from Lakewood City Public School System, 1470 Warren Road, Lakewood, Ohio 44107.

Decision Making Activity Package

The objectives of the Decision Making Activity Package are: (1) to stimulate students' awareness of their decision-making opportunities, (2) to provide students some decision-making opportunities, and (3) to facilitate students' understanding of the process of decision-making.

The package contains activities for suggested grade levels two through six. Many of the decision situations are oriented around moral value decisions and drug and alcohol abuse decisions. The package is available from Cooperative Educational Service Agency Number Eight, 107 North Douglass Street, Appleton, Wisconsin 54911.

Coping With

The Coping With Series includes 23 illustrated paperbacks to help young people cope with their problems, interests, and concerns. The series includes facts and fantasies books on drugs, alcohol and smoking; the crutches books; getting along with others books; and the you-yourself books. The series is published by American Guidance Service, Inc., Publishers' Building, Circle Pines, Minnesota 55014.

Conflict Resolution in Contemporary Society

One school district in western Pennsylvania, even prior to participation in the Educational Quality Assessment (EQA) program, recognized the needs of youth in a society in which "problems seem to be increasing at a pace faster than ... our ability to deal with them." They attempted to meet these needs through a program designed to help "students understand the nature of human conflict and alternative methods of resolving such conflict." The ESEA Title III project, "Conflict Resolution in Contemporary Society" (Breon, 1971), resulted in the development of a curriculum which could be used as units in social studies classes, an elective course, or several mini-courses.

Even though the unit was not directly designed to improve Goal X scores in EQA, nor was a specific evaluation of the program done with EQA instruments, the most recent EQA reports may demonstrate some

effects of the program on Goal X scores. Recognizing the fact that other variables could be having an effect, there is such an overwhelming difference between grade 11 Goal X percentile scores and grade 8 Goal X percentile scores, that this writer feels that the fact eleventh grade students were exposed to the program and eighth grade students were not must be of some influence. There was a difference of 67 percentile units between the grades - eleventh grade having the higher percentile. The program may also have effects in other goals, especially understanding others (Goal II) and societal responsibility (Goal V).

The program hoped to realize the following objectives:

a. Students will be able to identify a range of basic elements in a variety of conflictual situations occurring on each of four conflict levels--intra-personal, inter-personal, societal, and international. These elements will include: (1) power and status; (2) property and wealth; (3) hostility, fear and aggression; (4) value conflict; (5) misunderstanding (frame of reference and mind set); (6) territoriality and nationalism; (7) scarcity and crowding.

b. Students will become aware of a broad range of strategies of conflict management, which will include: (1) reconciliation, (2) dissonance reduction, (3) concession, (4) value clarification, (5) toleration, (6) compromise, (7) mediation, (8) arbitration, (9) authoritative disposition (law), (10) group pressure.

c. Students will be able to apply a wide range of strategies for conflict management to specific conflictual situations represented in literature, simulation, role play and other concrete forms.

d. Students will be able to develop evaluative criteria for assessing the effectiveness and desirability of strategies of conflict management in their application to specified situations.

e. Students will attend to situations of conflict and commit themselves to action according to criteria of appropriateness as determined by each individual.

f. Students will learn to clarify their own values through the use of skilled discussion tactics....

g. Students will learn to respect value differences in regard to complex issues of existence.

h. Students will evaluate the difference between violent action vs political action.

i. Students will trace conflict from the 'generation gap' in their homes to the attempt to live peaceably among a family of nations.

j. Students will identify 'middle ground' in areas where groups operate along opposing lines to attain opposing goals.

k. Teachers will develop the same skills, hopefully, as listed for students.

l. Teachers will utilize team teaching techniques and become aware of inter-disciplinary approaches to the problem of conflict resolution.

m. Teachers will develop self-evaluative techniques of interaction analysis.

n. Teachers will develop skills and techniques in value clarification through discussion.

o. Teachers will increase their awareness of other school programs and other disciplines in addition to those in which they work each day.

p. Teachers will develop skills and techniques of value clarification....

Teacher Training Programs

Although the above programs obviously must include teacher training prior to their use, the programs are directed at involving student skills. There are also available courses which are directed at increasing the teacher's ability and strategies to improve students' abilities to solve problems.

Development of Higher Level Thinking Abilities

One of these is Development of Higher Level Thinking Abilities (HLTA) course by McCollum and Davis (1972) of Northwest Regional Educational Laboratory (NREL). It is billed as a low-cost, mass-diffusible, competency-based instructional system which includes all materials and procedures for 36 hours of instruction. Organized into 28 instructional sequences, or units, it is conducted as an in-service workshop or preservice course. Teachers learn to use teaching strategies that increase the students' abilities to solve problems by categorizing facts, drawing generalizations from these facts, and applying them to unknown situations. As a result of teachers using these teaching strategies, students learn whys and hows, rather than memorizing facts. They learn to use sound judgment and to solve problems creatively, as well as to assimilate large bodies of knowledge. Each of the teaching strategies is learned through a series of five steps: (1) the skill is introduced with the leader playing role of a classroom teacher and the teachers playing the role of students, (2) the theory of the skill is presented, (3) the skill is broken into its component parts and simulated in small groups, (4) the strategy is demonstrated with laboratory students, and (5) each teacher uses subject area skill with regular students. It is currently available from the distributor: Commercial Educational Distributing Services, P.O. Box 3711, Portland, Oregon 97208.

Facilitating Inquiry in the Classroom

Another course from NREL is written by Newton (1970) to train teachers in behaviors which encourage students to inquire and become autonomous learners. It is also billed as a low-cost, mass-diffusible, competency-based instruction system which includes all materials and procedures for 40-45 hours of instruction as a campus course or in-service workshop. The instruction is organized into 18 instructional sequences or units, each of which provides: notes to leaders; leader preparation; list of participant materials; step-by-step procedures including rationale, timing, schedule and leader input; and participant handouts. While progressing through the sequences for learning each teaching technique, the participant learns to identify the technique, practices it, and finally practices applying it to a subject area in the classroom.

Teachers who complete the training program learn to perform 27 specific behaviors that encourage pupils to inquire and become autonomous learners. In broad terms, they develop abilities: (1) to identify, practice, and use certain interaction patterns that allow students to inquire, help students grow in ability to learn independently, and reveal student attitudes and perceptions of inquiry processes; (2) to identify what students do when they inquire, how they grow as inquirers, and to diagnose and evaluate where individual students are on a continuum of inquirer growth; and to carry out and assess their own learning. It is available from Commerical Educational Distributing Services, P.O. Box 3711, Portland, Oregon 97208.

The Art of Problem-Solving

The Art of Problem-Solving by Carkhuff (1973) is a guide for parents, teachers, counselors, or administrators in helping others develop problem-solving skills. The methods are to be used on an individual basis to help a person with a problem (the "helpee") gain knowledge of the problem-solving process. The "helper" is given an example case which runs through the book and through the "stages" of the problem - exploring and understanding the problem, defining the problem and putting it in concrete terms, developing courses of action that are workable, developing a "value hierarchy," preparing a graph with numerical values given for each course of action, and designing a step-by-step procedure to successfully carry out the course of action selected. This method seems usable only by those "helpers" which have ample time to spend with the "helpee." This presents severe limitations to the public school teacher, a counselor or administrator.

Instructional Staff Development

The Instructional Staff Development (ISD) program by Koutnik of Mid-Continent Regional Educational Laboratory (McREL) is designed to train teachers to exhibit behaviors which lead to inquiry skill development in students. The program is designed for one school year and includes 18 instructional sessions, lasting 2-½ to 3 hours, plus 15 practice sessions of about one hour each. The instructional materials are divided into six components which are to be implemented in sequential fashion.

A trainer's manual for each component is the focal point for implementation activities. The manual provides step-by-step instructions for preparation, execution, and evaluation of the training activities.

The training package also includes 32 transparencies, handout materials for teacher use, 30 minutes of model videotapes, and one hour of practice audiotapes. The teachers spend most of their time planning and presenting lessons in a micro-teaching session and in assessing results with the help of the trainer to determine whether the lesson was carried out according to plan. Other trainer's responsibilities include conducting preassessment/postassessment and initiating and maintaining discussion without judging rightness or wrongness to help teachers conduct an inquiry into their own inquiry teaching. For more information contact: McREL, 7302 Pennsylvania Avenue, Kansas City, Missouri 64114.

Teaching Children How to Think

Teaching Children How to Think is a guidebook for elementary teachers to assist them in selecting or developing and using instructional materials for teaching creativity and problem-solving. It also presents information on teaching creativity and problem-solving to minority and educationally disadvantaged children. Published materials for teaching creativity and problem-solving were reviewed and are presented in the book when there was supporting research or evaluation evidence, a sound rationale, or other signs of instructional effectiveness. Each published product is described in detail in the book, and information is given for ordering it.

Additional chapters in the book review well-established methods for teaching creativity and problem-solving, techniques for teachers to use in developing creativity and problem-solving instructional materials, and approaches to the implementation of instruction in the areas of creativity and problem-solving. There is also a brief review of the special needs of educationally disadvantaged children, of the most thoroughly researched and evaluated instructional material, and of some theoretical conceptions concerning creativity and problem-solving. For more information, contact: John F. Feldhusen, Project Director, Purdue University, West Lafayette, Indiana 47906.

Thinking and Reasoning Teacher Development

Thinking and Reasoning Teacher Development by Randall and Newman (1975) is a teacher training kit designed for teachers of kindergarten and first grade children. The program teaches skills in using methods and techniques to promote the development of children's analytic-thinking and problem-solving skills. Teaching skills included in the program are modeling processes, questioning, observing, and giving reinforcement and feedback with a focus on processes and thinking skills.

A teacher's manual includes: (1) an analysis of the problem-solving process; (2) a rationale for teaching each of the thinking skills, relating each skill to the problem-solving process; (3) suggested activities for teaching each thinking skill; (4) methods for designing activities for teaching each skill; and (5) teaching strategies found

to be effective in teaching analytic-thinking and problem-solving skills. Included are sample behavioral objectives, questions for stimulating thinking skills, and narrative examples of lessons for each skill.

A trainer's kit includes a trainer's manual for conducting preservice and/or in-service workshop training sessions, including methods for individualizing the training; one videotape or film to motivate and interest teachers in developing children's analytic-thinking and problem-solving skills; three videotapes or films, each focusing on a discrete analytic-thinking skill such as observing, predicting and inferring, and thinking of unusual uses; and a videotape or film focusing on the problem-solving process. Also included are activities for teachers to reinforce skills addressed in the teacher's manual.

Teacher training usually focuses on subject matter. As a result, children usually learn thought processes incidentally. The product offers a systematic approach for teachers to build an awareness in children of thought processes that can be used in problem situations. Although teacher training concentrates on process teaching, teachers will integrate the focus on processes with the content being taught.

The training workshops are designed to interest teachers in using and building skills in process teaching. The training is offered in modules with emphasis based on concerns expressed by the participants. In order to meet varying learning styles of participants, one may select from several modes of presentation (such as discussion groups, reading, writing, observing videotapes, and role-playing) to meet objectives and competencies.

The teacher will integrate Thinking and Reasoning teaching methods into existing curriculums and design new activities with a focus on thinking skills. For more information contact: Southwest Educational Development Laboratory, 211 East 7th Street, Austin, Texas 78701.

Learning Activities Packages

Searles and Blue (1975) in a manual entitled Individualizing Activities for Teaching Coping Skills describe "a series of exercises for teachers of students looking for skills to cope with the agonies and ecstasies of living together, and alone, in a world swinging between despair and exaltation." What, in fact, the booklet does is to describe the procedure to organize and construct learning activity packages (LAPS) with the suggestion that they are constructed for coping skills. Much of the booklet is devoted to an example LAP from the Lancaster-Lebanon Intermediate Unit 13 Adult Basic Education Program. Help in the preparation of LAPS would be available from this source.

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